IS 4568 (2007): Lifeboat Oars (Wood) [TED 19: Marine Engineering and Safety Aids]

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भारतीय मानक

# जीवन रक्षक नौकाओं के डांड (लकड़ी) — विशिष्टि

( पहला पुनरीक्षण )

*Indian Standard*

# LIFEBOAT OARS (WOOD) — SPECIFICATION

*( First Revision )*

ICS 47.080



**BUREAU OF INDIAN STANDARDS**
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

*September* 2007

**Price Group 2**

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Marine Engineering and Safety Aids Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1968. This revision has been undertaken in order to incorporate changes in International Maritime Resolution requirements (IMO). In this revision recommendations of length and diameter of rowing oars have been modified.

Lifeboat oars form a part of the lifeboat equipment and in the interest of safety of the passengers and crew on board any merchant navy ship, the statutory rules of this country give a guide to the number and size of the oars to be carried on board each lifeboat, depending upon its length.

This standard generally incorporates the requirements under the *Merchant Shipping Act*, 1958 and the Rules made thereunder. The lifeboat oars are subject to the approval by the Government of India under the said Act and the Rules.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# *Indian Standard*

# LIFEBOAT OARS (WOOD) — SPECIFICATION

## *( First Revision )*

### 1 SCOPE

This standard covers the general requirements, dimensions and tests for lifeboat oars provided in lifeboats fitted on ships, tugs, etc.

### 2 REFERENCE

The following standard contains provision, which through reference in this text, constitutes provision of this standard. At the time of publication the edition indicated was valid. This standard is subject to revision and parties to agreements based on this standard is encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

| *IS No.* | *Title* |
|---|---|
| 1150 : 2000 | Trade names and abbreviated symbols for timbers species (*third revision*) |

### 3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

**3.1 Oar** — A strong, buoyant wood member with a loom and a shaft of round shape and a broad flat blade, used for steering or rowing lifeboats (*see* Fig. in Table 3).

**3.1.1** *Rowing Oars* — Oars used only for propelling the boat.

**3.1.2** *Steering Oars* — Oars used to steer the boat. Steering oars are longer than the rowing oars and for easy identification the blade is generally painted.

### 4 SPECIES OF TIMBER

**4.1** The species of timber considered suitable for lifeboat oars are given in Annex A. The abbreviations given are based on IS 1150.

**4.2** The guiding principles for selection of timber for lifeboat oars, shall be high strength, shock resistance and light weight. The wood shall be of a type which absorbs very little moisture and shall be buoyant.

### 5 REQUIREMENTS OF BLANKS

#### 5.1 Dimensions

Blanks selected for the preparation of lifeboat oars shall be of such dimensions which would permit normal wood working operations to bring them to the required size in one piece. Laminated timber construction, together with marine glues for lamination work, may also be used. Glues, used for lamination work, should be synthetic resin adhesives, suitable for marine use.

#### 5.2 Seasoning

Blanks for the preparation of lifeboat oars shall be seasoned to a moisture content not more than 12 percent.

#### 5.3 Defects in Blanks

Defects such as pin holes, end splits, decay, hollow heart and dead knot shall not be acceptable in the final finished product.

**5.3.1** After seasoning no surface cracks which are likely to appear in the final finished product shall be permitted.

**5.3.2** Knots shall be sound and well interwoven with the rest of the fibres in each member. They shall not be more than such number and so distributed, as can be permitted in the finished product.

### 6 MANUFACTURE

**6.1** All lifeboat oars shall be finished reasonably smooth.

**6.2** Permissible tolerances shall be as given in **9**.

**6.3** Oars shall meet the requirements of tests given in **10**.

#### 6.4 Permissible Defects

**6.4.1** No defects, other than those mentioned below, shall be permitted in the finished condition of the lifeboat oar.

**6.4.2** *Sound Knot*

Only two knots tightly interwoven with the rest of the fibres in any part of the oar except at places of crutches and at the junction of loom and shaft, and shaft and blade shall be permissible.

**6.4.3** *Slope of Grains*

The slope of grains shall not be more than one in 25 at any place which forms a portion of the finished product.

**6.4.4** No chipping or de-lamination shall be permitted in any portion of the finished oars.

## 7 GENERAL REQUIREMENTS

**7.1** The number of rowing and steering oars to be equipped with each lifeboat, depending on the length of the boat, shall be as given in Table 1.

**Table 1 Recommended Number of Oars for Different Lengths of Lifeboats Propelled Solely by Oars**

| Sl No. | Lengths of Lifeboat m | No. of Rowing Oars | | No. of Steering Oars |
|---|---|---|---|---|
| | | Regular Use | Spare | |
| (1) | (2) | (3) | (4) | (5) |
| i) | 4.25 and under | 4 | 2 | 1 |
| ii) | Over 4.25 to 5.50 | 5 | 2 | 1 |
| iii) | Over 5.50 to 7.30 | 6 | 2 | 1 |
| iv) | Over 7.30 to 8.50 | 7 | 2 | 1 |
| v) | Over 8.50 | 8 | 2 | 1 |

**7.2** The length of rowing and steering oars and the diameter of shaft of oars, corresponding to the length of lifeboat, shall be as given in Table 2.

**Table 2 Recommended Length and Diameter of Rowing and Steering Oars**

| Sl No. | Length of Lifeboat m | Steering Oars | |
|---|---|---|---|
| | | Length mm | Dia of Shaft mm |
| (1) | (2) | (3) | (4) |
| i) | 4.25 and under | 3 350 | 60 |
| ii) | Over 4.25 to 6.60 | 3 660 | 60 |
| iii) | Over 6.60 to 7.30 | 3 960 | 65 |
| iv) | Over 7.30 to 8.50 | 4 270 | 65 |
| v) | Over 8.50 | 4 570 | 65 |
| **Sl No.** | **Length of Lifeboat m** | **Rowing Oars** | |
| | | Length mm | Dia of Shaft mm |
| (1) | (2) | (3) | (4) |
| i) | 4.90 and under | 3 050 | 64 |
| ii) | Over 4.90 to 6.70 | 3 550 | 64 |
| iii) | Over 6.70 to 7.30 | 3 650 | 64 |
| iv) | Over 7.30 to 8.50 | 3 950 | 67 |
| v) | Over 8.50 | 4 300 | 67 |

## 8 DIMENSIONS

The dimensions of lifeboat oars shall be as given in Table 3.

## 9 TOLERANCES

**9.1** The tolerances on length of oars shall be ± 0.05 m.

**9.2** The tolerance on the diameter of shaft and loom of oars shall be ±1 mm. The tolerance on the minimum width, on the working face, at the end of blade shall be ± 2 mm.

## 10 TESTS

**10.1** All oars shall be subjected to the tests given in **10.2** to **10.6**.

**10.1.1** Oars which have failed to meet the requirements of these tests shall be rejected.

### 10.2 Drop Test

Oars shall be dropped in a horizontal position from a height of 1.25 m on a hard surface for not less than five times continuously.

**10.2.1** At the end of test there shall be no visible damage, chip or crack.

### 10.3 Immersion Test

Oars shall be placed in water at a temperature of 27°C such that their blades are completely immersed up to the point of their junction with the shaft and loom, for a period of 24 h and dried again for 24 h. This process shall be repeated three times consecutively.

**10.3.1** At the end of the test there shall be no visible damage or warping or increase in weight.

### 10.4 Strength Test

Oars shall be held firmly as a cantilever by the shaft over a grip of 300 mm, such that the blade is horizontal to the ground with its working face on top. The position of grip on the shaft, shall correspond to the position of crutch, when the oar is shipped into operating position, A load of 50 kg shall be placed at the centre of the blade for a period of at least 30 min and then removed (*see* Fig. 1).

**10.4.1** At the end of the test there shall be no visible damage on the working surface.

### 10.5 Vibration Test

The oars shall be held firmly as cantilever by the shaft over a grip of 300 mm such that the working face of the blade is horizontal to the ground. The position of grip on the shaft, shall correspond to the position of crutch, when the oar is shipped into operating position. The blade shall be pressed down by hand to a depth of one fifteenth of the length of the oar and suddenly released (*see* Fig. 1).

**10.5.1** At the end of the test there shall be no visible damage or permanent deformation. The vibration shall subside within 30 s.

### 10.6 Impact Test

The oars shall be held firmly as cantilever by the shaft over a grip of 300 mm such that the blade is horizontal to the ground with its working face on top. The position of grip on the shaft, shall correspond to the position of

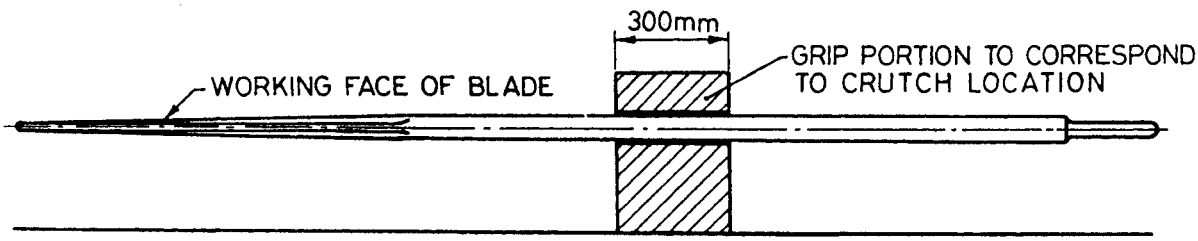
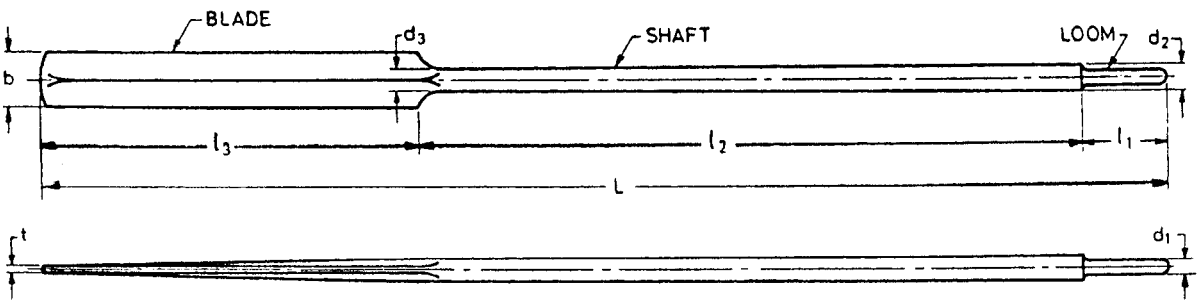



FIG. 1 METHOD OF HOLDING THE LIFEBOAT OAR FOR STRENGTH, VIBRATION AND IMPACT TESTS

**Table 3 Dimensions of Lifeboat Oars**

(*Clauses* 3.1 *and* 8)

All dimensions in millimetres.




| Sl No. | Length of Oars | Loom | | Shaft | | | Blade | | |
|---|---|---|---|---|---|---|---|---|---|
| | $L$ | $l_1$ | $d_1$ | $l_2$ | $d_2$ | $d_3$ | $l_3$ | $b$ | $t$ |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| i) | 3 050 | 230 | 40 | 1 800 | 70 | 60 | 1 020 | 150 | 13 |
| ii) | 3 350 | 230 | 40 | 2 000 | 70 | 60 | 1 110 | 150 | 13 |
| iii) | 3 660 | 230 | 40 | 2 210 | 70 | 60 | 1 220 | 150 | 13 |
| iv) | 3 960 | 230 | 40 | 2 410 | 75 | 65 | 1 320 | 150 | 15 |
| v) | 4 270 | 230 | 40 | 2 610 | 75 | 65 | 1 420 | 150 | 15 |
| vi) | 4 570 | 230 | 40 | 2 820 | 75 | 65 | 1 520 | 150 | 15 |

crutch when the oar is shipped into operating position. A leather bag (filled with sand) of 500 g in weight, or a wooden roller of same weight with edges rounded off, shall be dropped once on the centre of the blade from a height of 1 m (*see* Fig.1).

**10.6.1** There shall be no visible damage or permanent deformation or indentation on the blade.

## 11 MARKING

**11.1** Each lifeboat oar shall be legibly and indelibly marked with the following:

a) Manufacturer's identification mark;

b) Month and year of manufacture; and

c) Species of timber by symbol (*see* Annex A).

### 11.2 BIS Certification Marking

The oar may also be marked with the Standard Mark.

**11.2.1** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.

# ANNEX A

(*Clauses* 4.1 *and* 11.1)

## TIMBER SPECIES CONSIDERED SUITABLE FOR OARS

| *Standard Trade-Name* | *Botanical Name* | *Abbreviated Symbol* |
|---|---|---|
| Aini | *Artocarpus hirsutus* Lam. | AIN |
| Ash | *Fraxinus* spp. | ASH |
| Benteak | *Lagerstroemia microcarpa* Wight (Syn. L. lanceolata Wall.) | BEN |
| Gurjan | *Dipterocarpus* spp. (other than D. *macrocarpurs* Vesque) | GUR |
| White Chuglam | *Terminalia bialata Kurz* (Sapwood) | WCH |
| Dhaman | *Grewia tiliaefolia* vahl | DHA |
| Bhendi | *Thespesia populrea* Corr. | BHE |
| Sissoo | *Dalbergia sissoo* Roxb. | SIS |
| Lendi | *Lagerstroemia parviflora* Roxb. | LEN |
| Mulberry | *Morus* spp (other than M. laevigata Wall.) | MUL |
| Teak | *Tectona grandis* Linn. | TEA |
| Mullilam | *Zanthoxylum rhetsa* DC. [Syn. *Fagara budrunga Roxb.*] | MUI |

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**Amendments Issued Since Publication**

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